

# MONTHLY NOTICES

## OF THE

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No. 8.

Professor CAYLEY, F.R.S., Vice-President, in the Chair.

The Rev. Daniel Ace, D.D., Laughton Vicarage, Gainsborough;

was balloted for and duly elected a Fellow of the Society.

*The Approaching Opposition of Mars.* By N. E. Green, Esq.

The Opposition of this planet will occur before the next meeting of the Society. I desire to call the attention of the Fellows to the circumstance that this will be the most favourable opportunity for many years for examining the details of the equatoreal continents.

A careful search should be made for the remarkable dark canals figured by Professor Schiaparelli, which are represented by him as connected with the bays of the sea of Maraldi and the strait of Herschel, especially with the two points of Dawes' Forked Bay.

The northern declination of *Mars* will compensate in great measure for the reduction in its diameter when compared with that of the last opposition, and every use should be made of this occasion for the re-examination of previous drawings.

*Extract of a Letter from E. J. Stone, Esq., to the Astronomer Royal, dated Royal Observatory, Cape of Good Hope, 1879, May 5.*

I am thankful to say that my Catalogue is at last finished. The last six hours of R.A. will be sent home by the next mail. It will contain 12,450 stars. The work has been most carefully prepared and examined; in fact, I have devoted myself entirely to the work, and have left no stone unturned to make it as good as possible. It must be the chief work of my life. I take with

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me my ledgers to read the copy through press, but all the original books of observation and books of reduction will be left here. I shall not require them, for I have read and re-read all the parts not printed. I shall also take with me the ledgers containing the unprinted observations incorporated in the Catalogue, 1877, 1878, and part of 1879. Mr. Gill will therefore be entirely clear from all responsibility for my work. I have pushed on the work here to such an extent that it would have taken more than four years to have printed the observations now completed for press, at the highest pressure ever attained at the Cape. Of course the first thing is to print the Catalogue, which contains all the results. Probably it may afterwards be desirable to print at least the table of instrumental corrections, and the separate mean results for 1877, 1878, and 1879; but I should not think it would be worth the expense of printing the annual Catalogues for these years. In this way expense would be greatly reduced, and everything needful could be given to astronomers. The work as sent home is complete, except that all the constellations have not been put in.

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*On the Value of the Solar Parallax derived from Observations of Mars made at Ascension Island during the Opposition of 1877.*

By D. Gill, Esq.

It is well known to the Fellows of the Society that the special object of the Ascension Expedition was to determine the solar parallax from observations of the diurnal parallax of *Mars*. The reductions are now so far completed that I can communicate the resulting parallax to the Society; and I have thought it better to do so without further delay, as some time must necessarily elapse before the full details can appear in the *Memoirs*.

The general plan of observation and treatment of the reductions has been described in the *Monthly Notices* for November 1878. According to that method, the places of the stars of comparison are regarded as absolutely known.

It was found, however, that the mutual distances of the comparison stars computed from the coordinates determined by meridian observations differed systematically from the same distances measured with the Heliometer according as the fainter star preceded or followed the brighter star. When the brighter star was preceding the computed distance always exceeded the measured distance, and *vice versa*. In other words (regarding a  $4\frac{1}{2}$ -mag. star as the mean magnitude of clock stars), the R.A. of the fainter stars appeared to be too great.

In the *Monthly Notices* for December 1878 it was shown that there appeared to be a systematic difference of personal error depending on magnitude, between observations by Eye and Ear